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ABSTRACT

This paper presents a theory of instruction in the art of rhetorical invention and provides a basis for making decisions about teaching it. Invention is the process of inquiry through which one arrives at propositions and develops arguments in support of them. The author argues that by teaching invention along with the other arts of rhetoric, teachers are giving their students as complete an understanding as possible of what is involved in the process of writing. Four categories of invention are defined: systematic group, unsystematic group, systematic and unsystematic individual invention. Methods of instruction for each of the four categories are delineated. (TS)

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Needed: A Theory of Instruction in the Art of Invention

by Catherine E. Lamb

Invention is back in fashion. One result has been a great diversity in what the word is made to mean. To some, it means the highly disciplined use of a set of topics; to others--judging from some papers at recent Conferences on College Composition and Communication--it may mean something as nebulous as getting students to "feel good" before they start to write. Or it may form part of a sales-inducing title for a series of readings or a composition text. Upon examination, one finds that the contents between the covers bear only the smallest resemblance to what ought to characterize a text devoted to perhaps the most important of the arts of rhetoric, invention.

In response to this exploitation, I want to argue for a rigorous definition of invention by appealing to the self interest of the practitioner of that art. Then, lest the demands of the art seem too far removed from the realities of the average freshman composition class, or even an advanced expository writing course, I want to describe a plan that permits a gradual introduction to the challenges of invention, at the same time that the benefits of using the art become increasingly obvious. In other words, I am working here with the beginnings of a theory of instruction in the art of invention: a systematic basis for making decisions about teaching it.

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Invention is the process of inquiry through which one arrives at propositions and develops arguments in support of them. I find that definition useful because it encompasses, I believe, the emphases in current work on invention by people such as Burke, Corbett, Rohmann and Wlecke, Young, Becker and Pike, and Winterowd. Why define invention in this way and then make it a major part of a writing course? Because it is in this form that one's students are most likely to profit from the benefits which using a method of invention makes possible.

Rhetoricians have always been interested in increasing their control of the writing process, at the same time recognizing that what is a partially intuitive process cannot be and ought not to be made a fully conscious one. From this perspective, by teaching invention along with the other arts of rhetoric, we are giving our students as complete an understanding as we can of what is involved in the process of writing. The rhetorical process begins when one is aware of the desire to communicate, continues with a formulation of the focus of one's interest and an exploration of the ways in which one might develop it. All these are concerns of invention. Only then does one consider such matters as what content will actually be used, how it will be organized and which stylistic features are appropriate. In sum, if we claim writing can be taught, why not take into account the entire process, rather than leaving the development of essential skills to chance?

Students who master a method of invention are well on their way to becoming independent thinkers and writers. There are at least three types of inquiry facilitated by a method of invention:

retrieving information one already possesses which is not easily accessible because one is not aware of it; analyzing a problem to determine what information one needs but does not have; finally, discovering, actually creating--or so it seems to the discoverer--new knowledge.

The extent to which particular methods of invention actually increase these skills has been explored in formal testing situations (Rohmann and Wlecke, 1964; Nelson, 1969; Odell, 1974; Young and Koen, 1973). My own experiences reinforce the findings of these tests. Once students understand the principles involved, they can quite easily use methods of invention as a retrieval process. I remember well a woman who had written a pleasant enough, although not well focused, essay on her experiences with her adopted son. When I worked with her on ways to improve it, using a simplified form of tagmemic invention, I asked her to begin by identifying a question which would enable her to concentrate on the aspect of her son she was most interested in and then to explore that. Using a set of questions as a retrieval procedure, she was able to enrich her essay with such details as how hard it was for her to punish him because he was always so accepting of it; how, as a fourth grader, he had wanted to spend his savings on canned goods for his teacher when she had said how poor she was.

Essays lacking concrete detail are familiar to us all, as are writing situations where the second use of invention--analysis--is valuable. I have just finished reading an essay comparing John Winthrop's, Thomas Jefferson's and Henry Thoreau's views on the ideal form of government. The essay was primarily a series of too

easily made generalizations which the writer might have avoided had she inquired more rigorously into the gaps in her knowledge of the three men's views. A set of topics would have provided her with the means for doing so. (These two examples are illustrations of the use of invention as an aid in the revising stage of the writing process, not in the pre-writing stage. I use them because it is only in the completed essay that one is able to determine best how well the student has applied the art.)

Finally, successfully using a method of invention as a discovery procedure is the sort of experience one hopes for both for one's students and one's self. In any context other than an immediately personal one, these discoveries may be insignificant, but that hardly negates their value for the discoverer. A student of mine was able to use the insights gained from having read a particular short story to understand why her peers in a small college continued to waste food even after it was demonstrated to them that it was not to their advantage to do so. When I began studying invention, I remember my great excitement when the answer to a question I asked both about the soldier in Thom Gunn's poem "Innocence" and the soldier in Isaac Babel's story "Crossing Into Poland" provided me with a framework for making a coherent interpretation of the latter.

In a sense, even though I have used examples from my own experience, I have just described an ideal: what using the art of invention ought to be and do for us as teachers and students of the writing process. The challenge for us is to find a way to translate this ideal into a reality for students who may not value

working rigorously with abstract intellectual ideas, who may not be particularly interested in excelling as writers. The problem is compounded by the fact that being able to use a method of invention well requires practice, so much so that mastering the method of invention can become an end in itself. Students are frequently unable to see what a method can do for them because they are so overwhelmed by what it has done to them.

When I began to understand some of the problems my students were having with invention (and here I'm speaking of students both in a community college and in a four year liberal arts college), I realized I needed some sort of basis for planning an introduction to invention, one which would allow me to tailor a course plan to the needs of particular classes and students. That is, I needed a theory of instruction--strategies for capitalizing on the available methods of invention and their uses--as a way of leading my students to mastering a method of invention in the sense defined in the first part of this essay.

I saw that what I had originally thought of simply as a way to classify methods of invention might also provide me with the principles for planning that I needed. The basis for classification is this: methods of invention may be seen as systematic or unsystematic, to be used by individuals or groups. By "systematic," I mean a method which provides for consciously performing a set of explicit operations, as a guide in one's inquiry. "Unsystematic" methods are characterized by their haphazard approach to the task of invention. The differences between unsystematic and systematic methods are analogous to the distinctions Jerome Bruner

makes between two general approaches children use in playing "Twenty Questions." At one extreme on a continuum of responses are the "potshotters" who make no attempt to define the limits of their inquiry or to utilize information from questions previously asked. Instead, they are quick to propose hypotheses of any kind. In contrast, the "constructionists" attempt to locate the constraints in a problem which then aid them in formulating a hypothesis. They do not ignore information from previous questions; they build on it (Bruner, 1964). Someone using an unsystematic method has a goal, but no clear idea of how to get there. If he uses a systematic method, he has a definite strategy, which increases his chances for success.

None of the four categories--unsystematic group, unsystematic individual, systematic group, systematic individual--is clearly distinct from any of the other three. For example, most freshman composition texts whose approach is unsystematic use what seem to be an arbitrarily selected number of Aristotelian topics. Neither are group and individual methods necessarily mutually exclusive. A method designed for the individual writer may be used with a group and vice versa. However, the group methods (which are not parts of formal rhetorics) appear to function optimally when used by groups. Individual methods used by individuals permit a greater degree of refinement and exactness than is possible in a group, especially if the group is operating democratically.

I want to emphasize here my view of the value of this classifying process: what is most valuable about the matrix formed by these two sets of variables is not that it classifies methods of

invention in neat, clearly distinct categories, but that it suggests the kinds of choices an instructor has in teaching invention.

Unsystematic Group Methods

In the most general sense, this category covers classroom situations where students are composing as a group. After a general topic is agreed upon, individuals, at random, suggest ways in which it may be amplified.

One refinement of the above activity is a form of what has come to be called "inquiry teaching," where an instructor sets out a problem and the students, working together, try to find a solution. Byron Massialas and Jack Zevin, in Creative Encounters in the Classroom, provide case studies of several such high school classes in a variety of disciplines.

Because no method of inquiry is taught, the context in which the inquiry takes place becomes vital. It is the teacher who is chiefly responsible for setting up and maintaining this supportive framework. One part of his or her role is to select the problem. Massialas and Zevin used experiences shared with students (examining a statue, reading a poem, looking at maps) for providing the raw material for problems. From these experiences, they formulated a question which students were to answer. They endeavoured to make the questions of sufficient interest so that students would be motivated to look for an answer. Note that the students become active in the process after a problem has been decided upon.

Once an inquiry has begun, the teacher becomes more facilitator than expert. He may perform such functions as summarizing main ideas or getting a discussion going that has bogged down. When

students have decided on what they think is a satisfactory answer or have reached an impasse, the teacher steps in again as expert, usually with whatever background information was omitted from the original problem statement.

The inquiries themselves are characterized by students bringing up what they consider to be relevant information. This information is then evaluated by other students or by their asking questions of one another or the teacher. Their inquiries are undirected in the sense that students are not taught a procedure to follow. However, when one examines class transcriptions, a form in their inquiry emerges. They explore alternatives and then select one of them, after they have been persuaded by arguments presented for it. They do not themselves formally evaluate the hypothesis; instead, they appeal to expert authority, the teacher. (One of the book's weaknesses is that the transcriptions of classes show primarily students who are spontaneous and creative in their investigations. We see only the process of inquiry flourishing, and none of its growth pains. A teacher who would be delighted with similar results is given little help in how to achieve them.)

There is a difference between questions arising from rhetorical problems and those discussed in the summary of Massialas and Zevin's work. For example, a question such as, "What can one do to increase the chances for cooperation from a hostile audience?", has no right answer of the certainty possible when one asks, "What kind of culture produced this piece of sculpture?", although its comparative lack of certainty does not mean it cannot be worked with. Students working on a question such as the former must

tolerate additional uncertainty and are encouraged to be more independent of the teacher. Massialas and Zevin would probably argue that the distinction just drawn is not valid. Yet, their stimulus material is always taken from sources whose identity can be verified and, sooner or later, they provide students with the verification.

The most obvious limitation of unsystematic group methods may also be their greatest strength. Group methods work best with groups and rhetoric is, finally, an individual activity. While it is highly unlikely that mastery of an unsystematic group method would be the end goal of a composition course, such a method seems valuable as a way of easing students into the study of invention. A teacher may use an unsystematic group method of the kind just described in designing a curriculum for students who are not only unfamiliar with invention in general but are also unused to having to think rigorously and systematically. The teacher may be particularly concerned about how to engage and maintain students' interest in invention, as well as in controlling the order in which they encounter key concepts and skills. He may begin with an unsystematic group method which places little demand on students as individuals. They may or may not participate; yet they have the chance to see the process in action, and, one hopes, to be convinced of its worth. They are also engaging in a simplified form of the process. Because they need not concern themselves with focusing their inquiry or evaluating its results in any rigorous manner, they can concern themselves with just the exploration aspect. Further, the insights gained may make students more receptive to

the values of a systematic individual method. The questions one asks in a systematic individual method provide a number of perspectives, just as individuals' contributions in a group do. Those students who become impatient with the apparent formlessness of classroom interactions in the kind of situation described earlier may well begin to see the value in working consciously with a discovery procedure. Hence, there may be value in ordering the various methods in sequence; in treating them as complementary and mutually reinforcing, rather than as mutually exclusive alternatives.

I have not myself made any extensive use of unsystematic group methods, chiefly because I have been reluctant to take the time to develop a group's inquiry skills as a group.

Unsystematic Individual Methods

Until quite recently, before the appearance of such texts as Ross Winterowd's The Contemporary Writer, most freshman composition texts, if they included a discussion of invention at all, treated it in an unsystematic way. They provided us who like to think of ourselves as rhetoricians with easy targets for criticism. These texts appeared to provide more direction for students than the group method just discussed, but the guidance remained at the level of suggestion: in effect, "Here are some things you might try if you're having trouble thinking of what to say." The notion that an emphasis on invention might appreciably affect the quality of the completed essay is absent and so the process itself is virtually passed over.

A teacher who views the study of invention as a necessary

part of the study of rhetoric would hardly be satisfied teaching only an unsystematic individual method. I have, however, had some success using a form of this approach in the early stages of a freshman writing course as a way of gradually inducing change in my students' conception of the writing process. Peter Elbow's book, Writing Without Teachers, was the basis for this part of the course. Elbow begins where I saw my students and me to be: he writes about his struggles to get something down on paper and then leads the reader through a discussion of writing as "growing" and "cooking," the two processes which have most helped him and his students as writers. By viewing writing as growing, he means to stress the developmental aspects of the act of writing. One finds what one wants to say by writing it out. Writing as cooking complements this first process: here, one acquires new perspectives through purposely getting conflicting or contrasting material to interact. With these two down to earth metaphors, Elbow is also providing students with a clear, easily understood explication of the principles underlying the art of invention.

In the early part of the course, I stressed writing as growing, a continuing process rather than a finished product which the teacher proofreads for grammatical and spelling errors. We used free writing, an unsystematic individual method, to develop and clarify ideas as a way of focusing attention on what happens before one is ready to write a complete essay. This experience was new to most students, but I expected it would put little stress on them intellectually.

I asked students to hand in their free writing along with the

completed essay so I could see which students had used the process in the way I had wanted them to. By the third assignment, half of the students in the class were doing so: successive versions contained substantial new content (sometimes the topic itself changed), or content that had appeared before was now rearranged or altered in some way, beyond the level of individual sentences. Students who did not use the process or used it perfunctorily, but who wrote satisfactory essays anyway, were not penalized. I was pleased that such a high proportion used it voluntarily.

Systematic Group Methods

With systematic group methods, one increases one's chances for successfully solving a problem. Another general label for them might be "brainstorming." Like unsystematic group methods, they were originally developed for use in areas outside of rhetoric. Their relevance here is that they too function as a way of gathering information for solving a particular problem. Also, like an unsystematic group method, the chief value of a systematic group method in a composition class is that it provides an introduction to an individual systematic method. Unlike the unsystematic group method described, its chances for success do not depend solely on the supportive framework created by an instructor, which facilitates contributions by group members, but also on techniques that participants utilize consciously. Brainstorming as discussed here is a more sophisticated process than that implied by the popular use of the term.

In Applied Imagination, Alex F. Osborn, an early popularizer of brainstorming, divides the problem-solving process into three

stages: "fact-finding," "idea-finding" and "solution-finding." The emphasis in the first stage is on defining the problem by gathering and analyzing all the available relevant data. "Idea-finding" covers the basic exploratory function of invention; the methods Osborn discusses are all designed to utilize association of ideas. Finally, in "solution-finding," one evaluates and then selects from proposed answers using four questions: "Is the idea simple enough? Is it compatible with human nature? Is it timely? Is it feasible?"

While a group is brainstorming, Osborn insists that two principles be adhered to. It must defer judgment on ideas expressed and it must emphasize the quantity of ideas produced. In support of the former, he cites a study showing that group brainstorming with deferment of judgment produced seventy percent more "good" ideas than individual brainstorming without deferment. ("Good" ideas are "potentially useful and relatively unique." Osborn values quantity because one of his studies indicates that a group produces seventy-eight percent more good ideas in the second half of its operation than in the first half.)

W. J. J. Gordon's Synectics describes a refinement of Osborn's brainstorming. "Synectics" itself means "the joining together of different and apparently irrelevant elements." The resulting process is an attempt to make conscious use of the "preconscious psychological mechanisms" present in the creative act. Research based on synectics theory makes the following assumptions:

(1) that the creative process in human beings can be concretely described and, further, that sound description should be usable in teaching methodology to increase

the creative output of both individuals and groups...
(ii) that the cultural phenomena of invention in the arts and in science are analogous and are characterized by the same fundamental psychic processes;
(iii) that individual process in the creative enterprise enjoys a direct analogy to the group process (pp. 5-6).

There are two elegantly simple, complementary mechanisms Synectics uses to promote creative activity. The first, "making the strange familiar" applies to the "problem-stating" phase of the process. In this phase, the group attempts to understand and define the problem it has been given. It does so by analyzing the problem to determine its similarity to something known previously. But, Gordon points out, this technique used alone is not likely to result in a novel solution. The real challenge, viewing a problem from a new perspective, is embodied in the second principle, "making the familiar strange." Both principles involve the use of metaphor; the second, in particular, makes extensive use of analogy, which Gordon defines as "comparisons between things with like functions and different forms."

The arguments presented by advocates of systematic group rather than individual approaches to problem solving suggest that their approaches may be of significant value in developing a writing course. If a systematic group method does indeed produce more and better results faster, a teacher may more easily engage students' interest in the process by beginning with such a method or using it as a step between unsystematic group and systematic individual methods. Osborn is unequivocal in arguing for the superiority of the group. The principle of association works more effectively in a "two-way current": the person making the association is stimulated as well as those hearing it made. The result

of this "social facilitation" is that "free associations on the part of adults are from sixty-five to ninety-three percent more numerous in group activity than when working alone (pp. 154-155)." Two other factors affect high group productivity: the stimulation that rivalry provides and the group's insistence that, initially at least, all suggestions be accepted.

Gordon summarizes the benefits of group over individual problem-solving in slightly different ways. A group is usually much more efficient than an individual. "A Synectics group can compress into a few hours the kind of semi-conscious mental activity which might take months of incubation for a single person (pp. 10-11)." Like Osborn, he maintains that group support increases individual daring. Finally, the diverse backgrounds among members (including, for example, sculptors, zoologists and marketing men) are a way of ensuring a wide range of responses. (One limitation in using Synectics in the classroom is apparent here. A teacher does not usually have the option of choosing the members of his class.)

Not surprisingly, other studies of brainstorming (Taylor et al., 1958; Dunnette et al., 1963) have challenged some of the conclusions of Osborn and Gordon, although one noted that subjects get more ideas in individual sessions after a group session. That is, group sessions may perform a valuable warm-up function. To the extent that one can generalize from the results of the last two experiments, it would appear that at the very least, a group approach to invention can serve to prepare and stimulate an individual working on the same problem.

My own use of systematic group methods has been limited to an adaptation of Gordon's Synectics as a systematic individual method. The first time I used Elbow's book I had originally planned to use brainstorming as a step between writing as growing and a systematic individual method. I took it out only because I thought I was cluttering up the curriculum with too many different methods. Quite by chance, I found out brainstorming might have been a particularly effective transition device for this class. In an informal discussion a group of students and I were having about the class, two of them said they had had previous experiences with brainstorming. One had used it in a criminology class to solve murders and the other had once worked for an advertising executive who used it.

Systematic Individual Methods

Systematic individual methods, because we are likely to be most familiar with them, require the least introduction. The bibliography at the end of this essay lists sources for further information. These methods--E. P. J. Corbett's adaptation of classical rhetoric, Kenneth Burke's Pentad, Rohmann and Wlecke's work with the Analogy and Meditation, Young, Becker and Pike's tagmemic rhetoric--best typify the advantages I have claimed earlier for teaching invention.

At least on the freshman level, it seems unwise to introduce more than one of them in a class. When I used Elbow's notions of growing and cooking, I used as my first examples of cooking, work with the Meditation and the Analogy similar to that discussed by Rohmann and Wlecke. In theory, these assignments were to function

as cognitive and affective bridges to what I thought of as a more sophisticated method, tagmemic invention. I believed that I was asking students to perform fewer and less complex operations in the prewriting stage than tagmemic invention required and so any resistance to the intellectual rigor involved might be reduced. Unfortunately, most students could not master the Analogy and the Meditation in the time allotted in the syllabus, and, because their mastery was not my main goal in the course, I went on with my course plan.

In spite of mistakes such as the above, my attention to gradual change in the course's design seemed to work. The first time I used this approach as a preparation for teaching a simplified form of tagmemic invention, two thirds of the students were using the set of questions successfully on their own by the third assignment. The content under each question for exploration showed they were aware of how the questions were to be used and, secondly, their essays showed evidence of their having utilized information gained in the exploration. I was pleased with this success rate because my earlier attempts trying to teach invention had been as frustrating for me as they were for my students. Students also saw value in what they were being taught. In evaluating the course, they described it as, "difficult, but very stimulating"; "difficult, but with end results"; "a challenge."

What happens to the study of the rest of the rhetorical process in a course designed around a series of methods of invention? Quite clearly, if a teacher's goal is to have students master a systematic method of invention, its complexity almost ensures that it will dominate a course. Fortunately, systematic

methods are applicable elsewhere in the rhetorical process (although to varying degrees); a teacher has many opportunities to demonstrate their value. Tagmemic invention and Burke's Pentad may be used in audience analysis; forms of questions may become organizing principles for essays; virtually any set of topics is extremely valuable for analyzing an already formed discourse, whether by a student or a professional. In other words, the method of invention used becomes a unifying principle in the course, on several levels.

There is much I do not know about how to order and present methods of invention. I cannot even demonstrate that any success I have had teaching a systematic individual method can be accounted for by this approach. My own experience suggests that, at the very least, this approach changes students' attitudes concerning what is of value in the writing process. There are other questions which should be explored: Are some combinations more promising than others? To what extent do students in a course structured in this way master skills associated with the art of invention: an increased ability to make discriminations and to use relevant detail in support of hypotheses and propositions? Answers to questions such as these will help us in formulating a theory of instruction in the art of invention.

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